

MBSS



An Eye on

Maryland Streams

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A PERIODIC NEWSLETTER ON THE MARYLAND BIOLOGICAL STREAM SURVEY PUBLISHED BY THE MARYLAND DEPARTMENT OF NATURAL RESOURCES MONITORING AND NON-TIDAL ASSESSMENT DIVISION AND PRIMARILY FUNDED BY THE MARYLAND ENVIRONMENTAL TRUST FUND

A Note from MBSS HQ. Welcome back to the MBSS e-newsletter. Its been a while since our last News and much is happening here at DNR and elsewhere in the world of Maryland streams. In this issue, we bring you a story of how MBSS data are serving to prioritize streams for restoration in the Liberty Reservoir watershed, updates on a few of our special projects - including MBSS-style work in our National Parks - and wrap-up of our highly successful benthic macroinvertebrate taxonomy workshop and spring training sessions. Just for laughs, we bring you a collection of photos from our 2002 field sampling as well as our take on the Crofton snakehead adventure. Enjoy!

MBSS Partners with National Park Service

In 2002, MBSS began the first of what will be several cooperative projects with the National Park Service (NPS). In response to a need to collect aquatic inventory and assessment data in and around Park lands in the Capitol Region, Paul Kazyak (DNR), Rich Raesly (Frostburg State University), and Bob Hilderbrand (University of Maryland Appalachian Lab) developed plans to complete a rigorous stream sampling program over the next several years. When completed, NPS will have a comprehensive biological inventory, a health status of NPS streams, and an identification of key stressors affecting waters flowing through NPS lands. This information is key to effective resource management.

By choosing to use MBSS methods, NPS will take advantage of the significant amount of data that has been and will be collected in NPS watersheds. The benefit to DNR? More data with which to conduct our own watershed assessments.

What has gone on so far? In 2002, streams along the C & O Canal were inventoried by Dr. Raesly and his colleagues, and more than 60 fish species were collected. During the next two summers, sampling will shift to the quantitative variety, with most sampling done at randomly-selected sites. Then the team, with Dr. Hilderbrand as lead, will shift to some state-of-the-art stressor identification work to provide NPS with a starting point for watershed management.

For more information about MBSS work in NPS streams, Call Paul Kazyak at 410-260-8607.

Carroll County Watershed Restoration Action Strategy

A few years ago, DNR began passing funding from the federal non-point source program (Section 319) to Maryland counties for the development and implementation of Watershed Restoration Action Strategies (WRAS). Stemming from Maryland's Clean Water Action Plan completed in 1998, the Strategies identify the most important causes of water pollution and resource degradation (such as eroded banks and elevated nutrient levels in streams) in priority watersheds and detail the actions needed to fix these problems. The strategies also describe how to protect those areas not yet impacted by development and set milestones by which to measure progress.

One such effort is being conducted for the Carroll County portion of the Liberty Reservoir Watershed by Carroll County's Water Resource Planning Division, with the assistance of DNR. The initial step in developing the WRAS was to collect information from several agencies including the Carroll County Planning Department, the Carroll County Department of Health, the Carroll County Soil Conservation District, DNR, the Maryland Department of the Environment (MDE), and the USEPA. The goal was to centralize, update, and integrate databases and mapping layers held by different agencies and groups to characterize current conditions in the watershed. Not only will this make the information easier to use, it will give a better idea of how to fill in gaps among the various data sets. For example, after looking at data from the MBSS and DNR's Stream Waders program, the County would select future biological sampling sites that complement rather than duplicate existing data.



The next step was to examine conditions in three subwatersheds that were selected as areas of focus within the Liberty Reservoir watershed: Middle Run, Snowden's Run and the West Branch of the Patapsco River. DNR's Watershed Restoration Division (WRD) provided training and staff to perform a Stream Corridor Assessment (SCA) for each of these subwatersheds, using protocols developed by WRD staff. Results from the SCA indicate that eroding streambanks and inadequate stream buffers (<50 feet of forest adjacent to the stream channel) were the two most common areas of concern in Middle Run and Snowden's Run subwatersheds.

The SCA data, along with biological and chemical data provided by MBSS, Stream Waders and the Chesapeake Coastal Watershed Service, will be used to prioritize areas of concern within these watersheds. This ranking process gives the County an opportunity to prioritize initial findings, based on the magnitude and location of a problem and how easy or difficult it will be to correct. The process will also highlight areas that need further study to determine either the cause or the extent of impairment, and good areas that are in need of protection. An example of a possible outcome (one among many) is that in Middle Run, a plan would be developed to identify land use and stormwater-related causes of eroding stream banks.

From this partnership between Carroll County and DNR, a process has been established to: 1) evaluate each of the subwatersheds within the County's portion of the reservoir watershed, 2) develop an understanding of the most common types of impairments within subwatersheds, and 3) implement a plan of action to address these impairments. For more information on the Liberty Reservoir WRAS, call Steve Nelson (Carroll Co.) at 410-386-2145. To learn more about DNR's Stream Corridor Assessment program, call Ken Yetman at 410-260-8812 (email: kyetman@dnr.state.md.us).



The uproar and hoopla over the snakehead in Crofton during the summer of 2002 made the national news, supplanting murder, mayhem and looming war as the item of interest for the nation's crack professional journalists. Godzilla got less ink when he stomped Tokyo flat. But when it was all said and done, DNR successfully eradicated the population of 6 adults and 1,000 juveniles. Problem solved!

Will the Real Dytiscidae Please Stand Up?

Last December, 55 folks gathered for two days at the University of Maryland Baltimore County (UMBC) to learn family-level freshwater benthic macroinvertebrate taxonomy. Organized by DNR staff and hosted by UMBC's Dr. Carl Weber, workshop attendees included consultants, local, state, and federal government staff, and members of non-governmental organizations. Sessions on the taxonomy of mayflies, stoneflies, caddisflies, true flies, beetles, odonates, megalopterans, true bugs, molluscs, and crustaceans emphasized hands-on practice using specimens from 79 of the 130 families found in Maryland streams and rivers. At the end of day two, everyone had the opportunity to test their newly-acquired knowledge. If you'd like to be notified of future taxonomy workshops, contact Dan Boward at 410-260-8605 or email dboward@dnr.state.md.us.



SO MANY BUGS....SO LITTLE TIME!

MBSS and Stream Waders Spring Training a Success

In keeping with the worst winter weather in years, MBSS Spring Index Period Training was snowed out back in February for the first time ever. To ensure that we would have a meeting place that was accessible, MBSS staff gave up on our original plans for using Soldiers Delight Natural Environmental Area in Baltimore County and donned shovels and back braces to clear a path at Morgan Run Center, our old Carroll County standby for training over the years. In spite of the weather, some 56 folks from 19 different organizations showed up. At any rate, we will pay much more attention to having a snow date alternate and location planned in advance in future years.



"IS THAT A STONEFLY OR A PIECE OF MY FINGER?" STAFF FROM COASTAL RESOURCES, INC. INSPECT A FROZEN BATCH OF BENTHOS AT THE MBSS 2003 SPRING INDEX PERIOD TRAINING AT DNR'S MORGAN RUN CENTER.

Maryland Streams Web Update

Since our last newsletter, we've made considerable changes to the Streams portion of the DNR web site. We've integrated stream-related content from various DNR agencies with monitoring, assessment and restoration programs. For instance, from the main DNR Streams page at http://www.dnr.state.md.us/streams/mbss/county_pubs.html you can now easily navigate to requests for proposals provided by the Governor's Watershed Revitalization Partnership Program for Stream Restoration. You can also find a quick link (http://www.dnr.state.md.us/streams/mbss/county_pubs.html) for downloading the excellent document, *Maryland Streams: Take a Closer Look*. Other new additions to the site are our downloadable "county reports" that summarize MBSS findings on a county scale, an updated version of our popular color key titled *Family-Level Key to the Stream Invertebrates of Maryland and Surrounding Areas*, and the most recent annual report on our Stream Waders volunteer stream sampling program.

Fun photos from the field...



MOMMY, HAVE WE GOT ANY
TARTAR SAUCE?



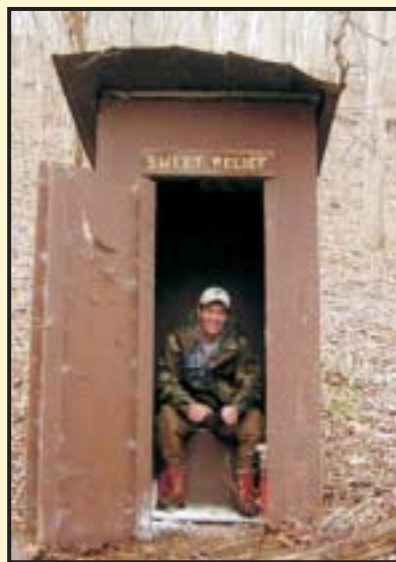
SEE IF THE DNR CAFETERIA
CHARGES ME A DOLLAR FOR
SUNFLOWER SEEDS AGAIN!



FORGET IT, DORIS. I'VE GOT A
HEADACHE!



FRED, DO YOU REALLY THINK NAKED
NIGHT SAMPLING WILL CATCH ON?



SOMETIMES I SITS AND I THINKS,
AND SOMETIMES I JUST SITS!



A REAL WOODSMAN KNOWS
HOW TO OBSERVE THE ANIMALS
AND LIVE OFF THE LAND!



WE'LL SHOW 'EM WE'RE NOT THE
ONLY HORNY ONES AROUND HERE!



THIS MIGHT ACCOUNT FOR THE
INCREASE IN COPROPHAGIC SPECIES!



MBSS HEADQUARTERS...NEW BUDGET!

Probability-based sampling catches on in MD

In the early days of the MBSS way back in 1993, only DNR, Montgomery County and the Maryland National-Capitol Park and Planning Commission had stream monitoring programs at least partly based on random selection of sites. Today the list has grown considerably and now includes Baltimore City, Baltimore County, Howard County and Prince Georges County. At first glance, it would seem easy to combine data from these programs with MBSS data. However, since no two programs are using an identical reach file, sampling design, and sampling methodology, combining results for a more powerful (hopefully a more precise and accurate) estimate of stream condition needs to be done carefully. For example, our friends at Versar recently completed a study comparing Montgomery County and MBSS protocols and design. The short answer is that combining data was possible and did increase the power of the estimates of condition. However, the effort was analytically complex and time consuming. To view a copy of the Versar report, go to:

<http://www.epa.gov/maia/html/montgom.html>

In our MBSS 2002 and future reports, we hope to incorporate county-collected data wherever it is appropriate in our annual reporting.

MBSS Data- how to get it

For years, MBSS staff have fielded requests for stream data. To handle the volume of requests and simplify the process, we developed the capability for interested folks to view or download data from DNR's web site. The original dataset included only random sites from the 1995-97 period, so Marty Hurd, MBSS' intrepid Data Manager, recently undertook a project to add new data. As of this writing, visitors to the MBSS website can obtain MBSS data from 1995 to 2002 and volunteer-collected Stream Waders data from 2000 to 2002. Our eventual goal is to have data from every site we have ever sampled (well over 2,100 sites, but who's counting...) available to interested parties.



After effects of the '02 Drought

With thoughts of last year's record drought fast fading into the reality of a fairly wet spring and summer, we thought it would be appropriate to ruminate on our observations last summer and so far this spring. First of all, we noticed that blacknose dace, the most abundant stream species in Maryland, seemed to become more and more scarce as the summer wore on. Given that their primary habitat, 1st order streams, also became scarce, did the '02 drought have a substantial constricting effect, and will a crash be apparent in 2003 data? Our guess is that it will, and because MBSS watersheds are selected at random each year in addition to the sites, our data should provide some useful clues. What about benthos, did they suffer the same fate in small streams? From cursory observations of our field crews and the QC auditor, it would seem that at least in some areas, the drought left benthos high and dry, reducing both diversity and abundance. In very dry years, do larger streams serve as primary sources of recolonization? If so, how long does recolonization take? Using MBSS Sentinel site sampling, we hope to begin to shed some light on these and other related questions. Stand by...



WITH LAST YEAR'S LACK OF RAIN, MANY STREAMS DRIED UP, WITH DEVASTATING RESULTS. MBSS BIOLOGIST JAY KILIAN STUMBLED UPON THESE UNFORTUNATE FISHES IN MINEBANK RUN (BALTIMORE COUNTY) AND WAS ABLE TO SNAP THIS PHOTOGRAPH BEFORE HUNGRY RACCOONS CAME TO FEAST.

New Reports

Several recently completed MBSS publications are now available via our web page. Surf over to http://www.dnr.state.md.us/streams/mbss/county_pubs.html to download our "county reports" that provide estimates of stream conditions and site-by-site information for each of Maryland's counties plus Baltimore City.

Round 3, Already???

At the end of this summer, 80% of the current round of statewide sampling will have been completed. With an eye toward the future - Round 3, folks at MBSS central are planning a fall gathering of MBSS and MBSS-like persons to discuss potential changes to the program. Design, sampling methods, indicators, populations of interest, enhanced county-state collaboration, QA/QC, and much more will be on the table at the meeting. Stay tuned to this channel for more details.

Buzzard Branch Pilot Project

Some of our most ecologically intact watersheds have the most to lose from development and other human activities, yet our efforts in watershed restoration are most often aimed at degraded watersheds. To explore whether landowners might be interested in enhancing stream conditions in a high quality watershed, Paul Kazyak, Alan Heft (DNR Fisheries), Karen Knotts (DNR Fisheries), Tamara O'Connell (DNR Fisheries), and Sam Castleman (Catoctin Mountain Land Trust) will be working with watershed residents to educate them about the quality of their watershed; suggest ways to improve or maintain conditions, and provide technical support as necessary. To start the process, Sam Castleman and staff from ThorpeWood, an environmental retreat center nestled in a secluded stream valley in the Catoctin Mountains, hosted a gathering of local residents back in February. Nearly 50 residents showed up for this inaugural event, and a dialog about watershed protection was successfully established. In future meetings our group hopes to more fully educate residents about how special their watershed is and generate support for restoration and protection activities. If successful, this pilot could be expanded to other watersheds that are in need of TLC. Stay tuned.



BUZZARD BRANCH, A HIGH QUALITY STREAM IN THE CATOCTIN CREEK DRAINAGE.

ADDITIONS TO THE MBSS COLLECTIONS



MIDGE



MUSSEL



MAYFLY



GOLDFISH



BABY
(*Erickus strankonius*)

New Staff (Erick Stranko)

On March 18, 2003, the MBSS team welcomed a 8 lb bouncing baby boy into the world. Named Erick Stranko, he already appears to have natural dipnetter's instinct, and his hands have a firm grip that should come in handy in few years. With their three growing kids, proud parents Scott and Angie Stranko now have the essence of an MBSS field crew.

Editor:

Ron Klauda

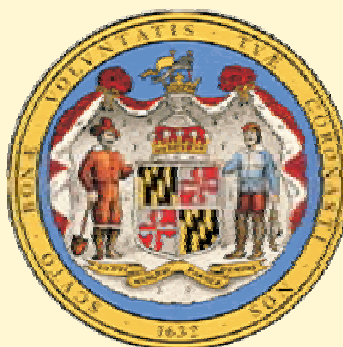
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A message to Maryland's citizens

The Maryland Department of Natural Resources (DNR) seeks to preserve, protect and enhance the living resources of the state. Working in partnership with the citizens of Maryland, this worthwhile goal will become a reality. This publication provides information that will increase your understanding of how DNR strives to reach that goal through its many diverse programs.

C. Ronald Franks
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